Biochemical Genetics—Volume 34, 1996

A journal for the reporting of original research in biochemical genetics of any organism, from virus to man. Papers will deal with the molecular aspects of genetic variation and evolution, mutation, gene action and regulation, immunogenetics, somatic cell genetics, and nucleic acid function in heredity and development and with the biochemical aspects of genetic defects (provided these are not purely clinical).

Papers on new methods that apply to the above topics will be included.

Review articles will also be published occasionally.

EDITOR

Hugh S. Forrest, Department of Zoology, University of Texas at Austin, Austin, Texas

EUROPEAN EDITOR

D. A. Hopkinson, The Galton Laboratory, London, England

ASSOCIATE EDITORS

Charles R. Shaw, Boulder Creek, California
Richard E. Tashian, University of Michigan, Ann Arbor, Michigan

ADVISORY BOARD

C. Baglioni, State University of New York, Albany, New York
L. Beckman, University of Umeå, Umeå, Sweden
G. J. Brewer, University of Michigan, Ann Arbor, Michigan
D. J. Cove, University of Leeds, Leeds, England
D. R. Davies, Institute of Plant Science Research, Norwich, England
C. H. Doy, Australian National University, Canberra, Australia
W. F. Feenstra, University of Groningen, Groningen, The Netherlands
W. M. Fitch, University of California, Irvine, Irvine, California
H. H. Fudenberg, University of South Carolina, Charleston, South Carolina
J. B. Harborne, University of Reading, Reading, England
L. Hood, University of Washington Medical School, Seattle, Washington
J. J. Hutton, Children's Hospital Research Foundation, Cincinnati, Ohio
G. Johnson, Washington University, St. Louis, Missouri
T. H. Jukes, University of California, Berkeley, California
H. N. Kirkman, University of North Carolina, Chapel Hill, North Carolina
L. I. Korochkin, Institute of Developmental Biology, Moscow, Russia
R. Lewontin, Harvard University, Cambridge, Massachusetts
E. Margoliash, Northwestern University, Evanston, Illinois
K. Paigen, Jackson Laboratory, Bar Harbor, Maine
J. Peters, MRC Radiobiology Unit, Didcot, England
F. H. Ruddle, Yale University, New Haven, Connecticut
J. G. Scandalios, North Carolina State University, Raleigh, North Carolina
O. Smithies, University of North Carolina, Chapel Hill, North Carolina
Z. Sormová, Institute of Organic Chemistry and Biochemistry, Prague, Czechoslovakia
H. E. Sutton, University of Texas at Austin, Austin, Texas
E. Vesell, Pennsylvania State University, Hershey, Pennsylvania
R. P. Wagner, Santa Fe, New Mexico
G. S. Whitt, University of Illinois, Urbana, Illinois
James E. Womack, Texas A&M, College Station, Texas

Biochemical Genetics is published bimonthly by Plenum Publishing Corporation, 233 Spring Street, New York, N.Y. 10013. *Biochemical Genetics* is abstracted or indexed in Agricola, Biological Abstracts, Biological and Agricultural Index, Chemical Abstracts, Chemical Titles, Current Awareness in Biological Sciences, Current Contents, Excerpta Medica, Genetics Abstracts, Index Medicus, Mental Health Abstracts, Referativnyi Zhurnal, and Science Citation Index.

© 1996 Plenum Publishing Corporation.

Biochemical Genetics participates in the Copyright Clearance Center (CCC) Transactional Reporting Service. The appearance of a code line at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use. However, this consent is given on the condition that the copier pay the flat fee of $9.50 per copy per article (no additional per-page fees) directly to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, Massachusetts 01923, for all copying not explicitly permitted by Sections 107 or 108 of the U.S. Copyright Law. The CCC is a nonprofit clearinghouse for the payment of photocopying fees by libraries and other users registered with the CCC. Therefore, this consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale, nor to the reprinting of figures, tables, and text excerpts. 0006-2928/96 $9.50

Advertising inquiries should be addressed to Advertising Sales, Plenum Publishing Corporation, 233 Spring Street, New York, N.Y. 10013-1578–telephone (212) 620-8495 and fax (212) 647-1898.

Subscription inquiries and subscription orders should be addressed to the publisher at Subscription Department, Plenum Publishing Corporation, 233 Spring Street, New York, N.Y. 10013 or faxed to the Subscription Department at its number (212) 807-1047, or may be telephoned to the Subscription Department's Journal Customer Service at (212) 620-8468, -8470, -8472, or -8082. Subscription rates:

Volume 34, 1996 (12 issues) $655.00 (outside the U.S., $765.00).
Volume 35, 1997 (12 issues) $675.00 (outside the U.S., $790.00).

Periodicals postage paid at New York, N.Y., and at additional mailing offices. Postmaster: Send address changes to *Biochemical Genetics*, Plenum Publishing Corporation, 233 Spring Street, New York, N.Y. 10013.

Printed in U.S.A.

Biochemical Genetics is published bimonthly by Plenum Publishing Corporation, 233 Spring Street, New York, N.Y. 10013. *Biochemical Genetics* is abstracted or indexed in Agricola, Biological Abstracts, Biological and Agricultural Index, Chemical Abstracts, Chemical Titles, Current Awareness in Biological Sciences, Current Contents, Excerpta Medica, Genetics Abstracts, Index Medicus, Mental Health Abstracts, Referativnyi Zhurnal, and Science Citation Index. © 1996 Plenum Publishing Corporation. *Biochemical Genetics* participates in the Copyright Clearance Center (CCC) Transactional Reporting Service. The appearance of a code line at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use. However, this consent is given on the condition that the copier pay the flat fee of $9.50 per copy per article (no additional per-page fees) directly to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, Massachusetts 01923, for all copying not explicitly permitted by Sections 107 or 108 of the U.S. Copyright Law. The CCC is a nonprofit clearinghouse for the payment of photocopying fees by libraries and other users registered with the CCC. Therefore, this consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale, nor to the reprinting of figures, tables, and text excerpts. 0006-2928/96 $9.50. Advertising inquiries should be addressed to Advertising Sales, Plenum Publishing Corporation, 233 Spring Street, New York, N.Y. 10013-1578—telephone (212) 620-8495 and fax (212) 647-1898. Subscription inquiries and subscription orders should be addressed to the publisher at Subscription Department, Plenum Publishing Corporation, 233 Spring Street, New York, N.Y. 10013 or faxed to the Subscription Department at its number (212) 807-1047, or may be telephoned to the Subscription Department's Journal Customer Service at (212) 620-8468, -8470, -8472, or -8082.

BIOCHEMICAL GENETICS

Vol. 34, Nos. 1/2, February 1996

CONTENTS

Identification of Homeobox Genes Expressed During the Process of Rat Liver Regeneration After Partial Hepatectomy 1
Ikuko Mizuta, Naotake Ogasawara, Hiroshi Yoshikawa, and Yasuhiko Sakoyama

A Novel *Tth*111I Restriction Fragment Length Polymorphism (RFLP) Allows Tracing of X-Chromosome Inactivation in the (Xid) Heterozygote 17
Vedapuri Shanmugam, Verne M. Chapman, Kenneth W. Sell, and Bratin K. Saha

Molecular Cloning of the Mouse Gene Coding for Carbonic Anhydrase IV 31
Shinya Tamai, Lee B. Cody, and William S. Sly

Transcriptional Competition and Homeosis in *Drosophila* 45
Lillian P. Burke, Tamara Jones, and Mark A. Mortin

NADH Diaphorase Polymorphism in European Fallow Deer 61
Arnd Schreiber and Peter Fakler

Population Genetics and Gene Variation in Screwworms (Diptera: Calliphoridae) from Brazil 67
David B. Taylor, Richard D. Peterson, II, and Gonzalo E. Moya-Borja

BIOCHEMICAL GENETICS

Vol. 34, Nos. 3/4, April 1996

CONTENTS

Extinction of Peroxisomal Functions in Hepatoma Cell–Fibroblast Hybrids 77
El Bachir Bioukar, Sophie Sarrazin, Marc Conti, Eric Rabetafika, Jean-Paul Carreau, Sophie Dhorne-Pollet, Nicole Raynaud, and Jean Deschatrette

Biochemical Evidence of Haplodiploidy in the Whitefly *Bemisia tabaci* 93
Frank J. Byrne and Alan L. Devonshire

Molecular Mechanism of Null Expression of Aldehyde Dehydrogenase-1 in Rat Liver 109
James Chen, Yuchio Yanagawa, and Akira Yoshida

AGI, a Previously Unreported *D. melanogaster* α-Glucosidase: Partial Purification, Characterization, and Cytogenetic Mapping 117
George F. Parker and David B. Roberts

Genetic Analysis of Factors Controlling High-Level Expression of Cytochrome P450, CYP6D1, Cytochrome b_5, P450 Reductase, and Monooxygenase Activities in LPR House Flies, *Musca domestica* 133
Nannan Liu and Jeffrey G. Scott

Arylsulfatase A: Relationship of Genotype to Variant Electophoretic Properties 149
David S. Park, Ronald D. Poretz, Michael H. Ricketts, and Paul Manowitz

Announcement 163

BIOCHEMICAL GENETICS

Vol. 34, Nos. 5/6, June 1996

CONTENTS

Both an Altered DNA Structure and Cellular Proteins Are Involved in Protecting a Triplex Forming an Oligopurine-Rich Sequence from Dam Methylation in *E. coli* 165
Jan Kiysik

Geographic Population Structure and Sequence Divergence in the Mitochondrial DNA Control Region of the Japanese Wild Boar (*Sus scrofa leucomystax*), with Reference to Those of Domestic Pigs 179
Naohiko Okumura, Naotaka Ishiguro, Masuo Nakano, Katsuya Hirai, Akira Matsui, and Makoto Sahara

Biochemical Systematics of Japanese Fireflies of the Subfamily Luciolinae and Their Flash Communication Systems 191
Hirobumi Suzuki, Yasushi Sato, Shizuo Fujiyama, and Nobuyoshi Ohba

Mutational Analysis of *N*-Linked Glycosylation of Esterase 6 in *Drosophila melanogaster* 201
Mark A. Myers, Marion J. Healy, and John G. Oakeshott

Genetic Regulation of Gene-Specific mRNA by Ethanol *in Vivo* and Its Possible Role in Ethanol Preference in a Cross with RI Lines in Mice 219
Christine E. Tagliabracci and Shiva M. Singh

Roles of the Conserved Serines of Metallothionein in Cadmium Binding 239
Tadasu Emoto, Masaaki Kurasaki, Shinji Oikawa, Mika Suzuki-Kurasaki, Masahi Okabe, Futoshi Yamasaki, and Yutaka Kojima

BIOCHEMICAL GENETICS

Vol. 34, Nos. 7/8, August 1996

CONTENTS

Intraspecific Mitochondrial DNA Variation in the Colorado Potato Beetle, *Leptinotarsa decemlineata* (Coleoptera: Chrysomelidae) 253
A. M. L. Azeredo-Espin, R. F. W. Schroder, G. K. Roderick, and W. S. Sheppard

Extensive Chromosome Aberrations in *Spiroplasma citri* Strain BR3 269
Fengchun Ye, Ulrich Melcher, John E. Rascoe, and Jacqueline Fletcher

DNA Fingerprinting of Captive Breeding Pairs of Lesser White-Fronted Geese (*Anser erythropus*) with Unknown Pedigrees 287
Håkan Tegelström and Lambart von Essen

Linkage of Acetylcholinesterase Insensitivity to Methyl Parathion Resistance in *Heliothis virescens* 297
Robert D. Gilbert, Patricia K. Bryson, and Thomas M. Brown

Application of DNA Fingerprinting to Population Study of Chamois (*Rupicapra rupicapra*) 313
T. Pérez, J. Albornoz, E. García-Vazquez, and A. Domínguez

Gene-Specific Universal Mammalian Sequence-Tagged Sites: Application to the Canine Genome 321
Patrick J. Venta, James A. Brouillette, Vilma Yuzbasiyan-Gurkan, and George J. Brewer

BIOCHEMICAL GENETICS

Vol. 34, Nos. 9/10, October 1996

CONTENTS

†Genetic Characterization of Equine Apolipoprotein A-I Using Isoelectric Focusing 343
Hironaga Kakoi and Yoshihiro Natsuno

Duplication of the *Ace.1* Locus in *Culex pipiens* Mosquitoes from the Caribbean 351
Denis Bourguet, Michel Raymond, Juan Bisset, Nicole Pasteur, and Martine Arpagaus

†Inheritance and Linkage of Aspartate Aminotransferase in *Anopheles stephensi* 363
T. Adak, Suman Wattal, and V. P. Sharma

Identification of a cDNA Encoding 6-Phosphogluconate Dehydrogenase from a Human Heart cDNA Library 367
Stephen Kwok Wing Tsui, Judy Yuet Wa Chan, Mary Miu Yee Waye, Kwok Pui Fung, and Cheuk Yu Lee

Inheritance and Linkage Analysis of Ten Enzyme and Blood Protein Loci in the Japanese Brown Frog *Rana japonica* 375
Masayuki Sumida

Plasma Protease Inhibitor (PI) System in the Laboratory Opossum, *Monodelphis domestica* 389
Helen Arthur, Kevin Bell, John L. VandeBerg, and Roland A. H. van Oorschot

Announcement 401

†NOTE

BIOCHEMICAL GENETICS

Vol. 34, Nos. 11/12, December 1996

CONTENTS

Comparison of the Primary Structure of *waxy* Proteins (Granule-Bound Starch Synthase) Between Polyploid Wheats and Related Diploid Species 403
N. Fujita, A. Wadano, S. Kozaki, K. Takaoka, S. Okabe, and T. Taira

Molecular Evolution of the *paired* Gene in *Drosophila:* Cloning and Characterization of the Partial *paired* Gene from *Drosophila willistoni* 415
Yoshinori Matsuo

Biochemical Characterization of Juvenile Hormone Esterases from Lines Selected for High or Low Enzyme Activity in *Gryllus assimilis* 421
Anthony J. Zera and Michelle Zeisset

†Biochemical Genetics of Indian Pygmy Field Mice: Superoxide Dismutase (*Sod-1*) as a Diagnostic Marker in *Mus booduga* 437
Sunita Singh and T. Sharma

Phylogenetic Relationship Among All Living Species of the Genus *Bubalus* Based on DNA Sequences of the Cytochrome *b* Gene 443
Kazuaki Tanaka, Chester D. Solis, Joseph S. Masangkay, Kei-ichiro Maeda, Yoshi Kawamoto, and Takao Namikawa

Identification of Two Glutaminases in *Rhizobium etli* 453
Socorro Durán, Luis Sánchez-Linares, Alejandro Huerta-Saquero, Gisela Du Pont, Alejandra Huerta-Zepeda, and Jorge Calderón

Referees for Volume 34 467

Author Index to Volume 34 469

Subject Index to Volume 34 471

†NOTE